

Listing of the Claims:

1-22. (Canceled)

23. (Currently Amended) ~~The method of claim 12, further comprising A~~
method for making an article selected from the group consisting of a component
for a solid oxide fuel cell including a stabilized zirconia-containing electrolyte and
a component of an oxygen sensor device including stabilized zirconia, the
method comprising:

providing a ferritic stainless steel comprising greater than 25 weight
percent chromium, 0.75 to less than 1.5 weight percent molybdenum, up to 0.05
weight percent carbon, and at least one of niobium, titanium and tantalum,
wherein the weight percentages of niobium, titanium and tantalum satisfy the
equation

$$0.4 \leq (\%Nb + \%Ti + \frac{1}{2}(\%Ta)) \leq 1,$$

and wherein the steel has a coefficient of thermal expansion within 25 percent of
the coefficient of thermal expansion of stabilized zirconia between 20°C and
1000°C, and at least one creep property selected from the group consisting of
creep rupture strength of at least 1000 psi at 900°C, time to 1% creep strain of at
least 100 hours at 900°C under load of 1000 psi, and time to 2% creep strain of
at least 200 hours at 900°C under load of 1000 psi;

solution annealing the steel; and

processing the steel into a the article ~~component selected from the group consisting of a component for a solid oxide fuel cell including a stabilized zirconia-containing electrolyte and a component of an oxygen sensor device including stabilized zirconia.~~

24. (Currently Amended) The method of claim 23, wherein the article component is selected from the group consisting of a separator for a solid oxide fuel cell including a stabilized zirconia-containing electrolyte and an interconnect for a solid oxide fuel cell including a stabilized zirconia-containing electrolyte.

25. (Currently Amended) An article of manufacture comprising a component including stabilized zirconia adjacent a component including a ferritic stainless steel, the steel comprising:

greater than 25 weight percent chromium;

0.75 to less than 1.5 weight percent molybdenum;

up to 0.05 weight percent carbon; and

at least one of niobium, titanium, and tantalum, wherein the ~~sum of the~~ weight percentages of niobium, titanium, and tantalum satisfies the equation

$$0.4 \leq (\%Nb + \%Ti + \frac{1}{2}(\%Ta)) \leq 1,$$

wherein the steel has a coefficient of thermal expansion within about 25 percent of the coefficient of thermal expansion of the stabilized zirconia between 20°C (68°F) and 1000°C (1832°F), and at least one creep property selected from the group consisting of creep rupture strength of at least 1000 psi at 900°C (1652°F),

time to 1% creep strain of at least 100 hours at 900°C (~~1652°F~~) under load of 1000 psi, and time to 2% creep strain of at least 200 hours at 900°C (~~1652°F~~) under load of 1000 psi.

26. (Currently Amended) The article of manufacture of claim 25, wherein the coefficient of thermal expansion of the steel is at least as great as the coefficient of thermal expansion of the stabilized zirconia between 20°C (~~68°F~~) and 1000°C (~~1832°F~~).

27. (Original) The article of manufacture of claim 25, wherein the stabilized zirconia is yttria-stabilized zirconia.

28. (Original) The article of manufacture of claim 25, wherein the steel includes no more than 0.50 weight percent titanium.

29. (Original) The article of manufacture of claim 25, wherein the steel includes no more than 0.005 weight percent carbon.

30. (Original) The article of manufacture of claim 25, wherein the steel further comprises at least one element selected from the group consisting of up to 0.1 weight percent cerium, up to 0.05 weight percent lanthanum, and up to 0.05 weight percent zirconium.

31. (Currently Amended) The article of manufacture of claim 25, wherein the ~~sum of the weight percentages~~ of niobium, titanium, and tantalum in the steel satisfies the equation

$$0.5 \leq (\%Nb + \%Ti + \frac{1}{2}(\%Ta)) \leq 0.75 \underline{1}.$$

32. (Original) The article of manufacture of claim 25, wherein the steel includes no more than 35 weight percent chromium.

33. (Currently Amended) The article of manufacture of claim 25, wherein the steel comprises:

25 up to 35 weight percent chromium;

0.75 to less than 1.5 weight percent molybdenum;

up to 0.005 weight percent carbon; and

at least one of niobium, titanium, and tantalum, wherein the steel includes no more than 0.50 weight percent titanium, and the ~~sum of the weight percentages of~~ niobium, titanium, and tantalum satisfies the equation

$$0.5 \leq (\%Nb + \%Ti + \frac{1}{2}(\%Ta)) \leq 0.75.$$

34. (Original) The article of manufacture of claim 25, wherein the article of manufacture is a component selected from the group consisting of a component for a solid oxide fuel cell including a stabilized zirconia-containing electrolyte and a component for an oxygen sensor device including stabilized zirconia.

35. (Currently Amended) The article of manufacture of claim 25 ~~34~~, wherein the article of manufacture ~~component~~ is selected from the group consisting of a separator for a solid oxide fuel cell including a stabilized zirconia-containing electrolyte and an interconnect for a solid oxide fuel cell including a stabilized zirconia-containing electrolyte.

36. (Currently Amended) A solid oxide fuel cell comprising:
an anode;
a cathode;
an electrolyte comprising stabilized zirconia, wherein the electrolyte is
and intermediate the anode and the cathode; and
an interconnect providing a current pathway from the anode, the
interconnect comprising a ferritic stainless steel including
greater than 25 weight percent chromium,
0.75 up to 1.5 weight percent molybdenum,
up to 0.05 weight percent carbon, and
at least one of niobium, titanium, and tantalum, wherein ~~the sum of~~
the weight percentages of niobium, titanium, and tantalum ~~satisfies~~ the
equation

$$0.4 \leq (\%Nb + \%Ti + \frac{1}{2}(\%Ta)) \leq 1,$$

wherein the steel has a coefficient of thermal expansion within
about 25 percent of the coefficient of thermal expansion of stabilized
zirconia between 20°C (68°F) and 1000°C (1832°F) and exhibits at least
one creep property selected from the group consisting of creep rupture

strength of at least 1000 psi at 900°C (~~1652°F~~), time to 1% creep strain of at least 100 hours at 900°C (~~1652°F~~) under load of 1000 psi, and time to 2% creep strain of at least 200 hours at 900°C (~~1652°F~~) under load of 1000 psi.

37. (Currently Amended) The solid oxide fuel cell of claim 36, wherein the coefficient of thermal expansion of the steel is at least as great as the coefficient of thermal expansion of stabilized zirconia between 20°C (~~68°F~~) and 1000°C (~~1832°F~~).

38. (Currently Amended) The solid oxide fuel cell of claim 36, wherein the coefficient of thermal expansion of the steel is at least as great as the coefficient of thermal expansion of yttria-stabilized zirconia between 20°C (~~68°F~~) and 1000°C (~~1832°F~~).

39. (Currently Amended) The solid oxide fuel cell of claim 36, wherein the steel comprises:

25 up to 35 weight percent chromium;

0.75 to less than 1.5 weight percent molybdenum;

up to 0.005 weight percent carbon; and

at least one of niobium, titanium, and tantalum, wherein the steel includes no more than 0.50 weight percent titanium, and the ~~sum of the~~ weight percentages of niobium, titanium, and tantalum ~~satisfies~~ the equation

$$0.5 \leq (\%Nb + \%Ti + \frac{1}{2}(\%Ta)) \leq 0.75.$$

40. (New) The solid oxide fuel cell of claim 36, wherein the steel includes no more than 0.50 weight percent titanium.

41. (New) The solid oxide fuel cell of claim 36, wherein the weight percentages of niobium, titanium and tantalum satisfy the equation

$$0.5 \leq (\%Nb + \%Ti + \frac{1}{2}(\%Ta)) \leq 1 .$$

42. (New) The solid oxide fuel cell of claim 36, wherein the weight percentages of niobium, titanium and tantalum satisfy the equation

$$0.5 \leq (\%Nb + \%Ti + \frac{1}{2}(\%Ta)) \leq 0.75.$$

43. (New) The solid oxide fuel cell of claim 36, wherein the steel includes no more than 0.50 weight percent titanium and the weight percentages of niobium, titanium, and tantalum satisfy the equation

$$0.5 \leq (\%Nb + \%Ti + \frac{1}{2}(\%Ta)) \leq 1 .$$

44. (New) The method of claim 23, wherein the weight percentages of niobium, titanium and tantalum satisfy the equation

$$0.5 \leq (\%Nb + \%Ti + \frac{1}{2}(\%Ta)) \leq 1 .$$

45. (New) The method of claim 23, wherein the weight percentages of niobium, titanium and tantalum satisfy the equation

$$0.5 \leq (\%Nb + \%Ti + \frac{1}{2}(\%Ta)) \leq 0.75.$$

46. (New) The method of claim 23, wherein the steel includes no more than 0.50 weight percent titanium and the weight percentages of niobium, titanium, and tantalum satisfy the equation

$$0.5 \leq (\%Nb + \%Ti + \frac{1}{2}(\%Ta)) \leq 1 .$$

47. (New) The method of claim 23, wherein solution annealing the steel comprises heating the steel at a temperature that is at least the greater of the intended service temperature of the steel and 1600°F.

48. (New) The method of claim 23, wherein the coefficient of thermal expansion of the steel is at least as great as the coefficient of thermal expansion of stabilized zirconia between 20°C and 1000°C.

49. (New) The method of claim 23, wherein the coefficient of thermal expansion of the steel is within about 25% of the coefficient of thermal expansion of yttria-stabilized zirconia between 20°C and 1000°C.

50. (New) The method of claim 23, wherein the steel includes no more than 0.005 weight percent carbon.

51. (New) The method of claim 23, wherein the steel further comprises at least one element selected from the group consisting of up to 0.1 weight percent cerium, up to 0.05 weight percent lanthanum, and up to 0.05 weight percent zirconium.

52. (New) The method of claim 23, wherein the steel includes no more than 35 weight percent chromium.

53. (New) The article of manufacture of claim 25, wherein the weight percentages of niobium, titanium, and tantalum in the steel satisfy the equation

$$0.5 \leq (\%Nb + \%Ti + \frac{1}{2}(\%Ta)) \leq 1 \text{ .}$$

54. (New) The article of manufacture of claim 33, wherein the component is selected from the group consisting of an interconnect for a solid oxide fuel cell including a stabilized zirconia-containing electrolyte and a separator for a solid oxide fuel cell including a stabilized zirconia-containing electrolyte.